

WHAT IS CLAIMED IS:

1 1. An optical controller comprising:
2 a plurality of lights, wherein each of said plurality of lights transmits a
3 different color;
4 a processor coupled to said plurality of lights, wherein said processor
5 sequentially pulses each light of said plurality of lights in a predetermined light sequence;
6 a user response sensor coupled to said processor, said user response sensor
7 having a first state of operation and a second state of operation;
8 a memory coupled to said processor, wherein for each light of said
9 plurality of lights pulsed by said processor, said processor registers said state of operation
10 of said user response sensor in said memory as a user response; and
11 a comparator circuit coupled to said processor, wherein for each light of
12 said plurality of lights pulsed by said processor, said comparator circuit compares said
13 user response to a predefined response, wherein said comparator circuit outputs a first
14 signal if said user response does not match said predefined response for each light of said
15 plurality of lights, and wherein said comparator circuit outputs a second signal if a
16 predefined plurality of user responses match a predefined response sequence.

1 2. The optical controller of claim 1, wherein said plurality of lights is
2 comprised of a plurality of LEDs, each of said plurality of LEDs emitting light at a
3 different wavelength.

1 3. The optical controller of claim 1, wherein at least one of said
2 plurality of lights is further comprised of an optical filter.

1 4. The optical controller of claim 1, wherein said predetermined light
2 sequence is a random light sequence.

1 5. The optical controller of claim 1, wherein said predetermined light
2 sequence is a non-random light sequence.

1 6. The optical controller of claim 1, said user response sensor further
2 comprising:

a light source directing a beam of light at a user's eye; and
a detector for receiving reflected light from said user's eye, wherein said detector outputs a first detector output signal when an amplitude associated with said reflected light is less than a first predetermined amplitude, and wherein said detector outputs a second detector output signal when said amplitude associated with said reflected light is greater than a second predetermined amplitude, wherein said first detector output signal corresponds to said first state of operation of said user response sensor, and wherein said second detector output signal corresponds to said second state of operation of said user response sensor.

7. The optical controller of claim 6, wherein said first predetermined amplitude is equivalent to said second predetermined amplitude.

8. The optical controller of claim 6, wherein said light source is an infrared light source.

9. The optical controller of claim 1, further comprising a controller power switch.

10. The optical controller of claim 9, wherein said controller power switch is vibration activated.

11. The optical controller of claim 1, further comprising an electronic locking mechanism having a locked position and an unlocked position, wherein said electronic lock is maintained in said locked position when said comparator circuit outputs said first signal, and wherein said electronic lock is maintained in said unlocked position when said comparator circuit outputs said second signal.

12. An optical controller comprising:
a housing;
an eyepiece coupled to said housing, wherein an interior portion of said housing is viewable through said eyepiece;
a plurality of lights located within said interior portion of said housing, wherein each of said plurality of lights transmits a different color;
a processor coupled to said plurality of lights, wherein said processor sequentially pulses each light of said plurality of lights in a predetermined light sequence;

a user response sensor coupled to said processor, said user response sensor having a first state of operation and a second state of operation;

a memory coupled to said processor, wherein for each light of said plurality of lights pulsed by said processor, said processor registers said state of operation of said user response sensor in said memory as a user response; and

a comparator circuit coupled to said processor, wherein for each light of said plurality of lights pulsed by said processor, said comparator circuit compares said user response to a predefined response, wherein said comparator circuit outputs a first signal if said user response does not match said predefined response for each light of said plurality of lights, and wherein said comparator circuit outputs a second signal if a predefined plurality of user responses match a predefined response sequence.

13. The optical controller of claim 12, wherein said plurality of lights is comprised of a plurality of LEDs, each of said plurality of LEDs emitting light at a different wavelength.

14. The optical controller of claim 12, wherein at least one of said plurality of lights is further comprised of an optical filter.

15. The optical controller of claim 12, wherein said predetermined light sequence is a random light sequence.

16. The optical controller of claim 12, wherein said predetermined light sequence is a non-random light sequence.

17. The optical controller of claim 12, said user response sensor further comprising:

a light source mounted within said interior portion of said housing, said light source directing a beam of light at an opening of said eyepiece, wherein said beam of light user's eye; and

a detector mounted within said interior portion of said housing, said detector receiving reflected light from a user's eye located at said opening of said eyepiece, wherein said detector outputs a first detector output signal when an amplitude associated with said reflected light is less than a first predetermined amplitude, and wherein said detector outputs a second detector output signal when said amplitude associated with said reflected light is greater than a second predetermined amplitude,

12 wherein said first detector output signal corresponds to said first state of operation of said
13 user response sensor, and wherein said second detector output signal corresponds to said
14 second state of operation of said user response sensor.

1 18. The optical controller of claim 17, wherein said first predetermined
2 amplitude is equivalent to said second predetermined amplitude.

1 19. The optical controller of claim 17, wherein said light source is an
2 infrared light source.

1 20. The optical controller of claim 12, further comprising a controller
2 power switch mounted to said eyepiece.

1 21. The optical controller of claim 20, wherein said controller power
2 switch is a pressure sensitive switch.

1 22. The optical controller of claim 12, said user response sensor further
2 comprising a pressure sensitive switch mounted on an exterior surface of said housing.

1 23. The optical controller of claim 12, further comprising an electronic
2 locking mechanism having a locked position and an unlocked position, wherein said
3 electronic lock is maintained in said locked position when said comparator circuit outputs
4 said first signal, and wherein said electronic lock is maintained in said unlocked position
5 when said comparator circuit outputs said second signal.

1 24. An optical controller comprising:
2 a housing;
3 an eyepiece coupled to said housing, wherein an interior portion of said
4 housing is viewable through said eyepiece;
5 a plurality of lights located within said interior portion of said housing,
6 wherein each of said plurality of lights emits a different color;
7 a processor coupled to said plurality of lights, wherein said processor
8 sequentially pulses each light of said plurality of lights in a predetermined light sequence;
9 a light source mounted within said interior portion of said housing, said
10 light source directing a beam of light at an opening of said eyepiece;

11 a detector mounted within said interior portion of said housing, said
12 detector receiving reflected light from a user's eye located at said opening of said
13 eyepiece, wherein said detector outputs a first detector output signal when an amplitude
14 associated with said reflected light is less than a first predetermined amplitude and a
15 second detector output signal when said amplitude associated with said reflected light is
16 greater than a second predetermined amplitude;

17 a memory coupled to said processor, wherein for each light of said
18 plurality of lights pulsed by said processor, said processor registers said first detector
19 output signal and said second detector output signal in said memory as a user response;

20 a comparator circuit coupled to said processor, wherein for each light of
21 said plurality of lights pulsed by said processor, said comparator circuit compares said
22 user response to a predefined response, wherein said comparator circuit outputs a first
23 signal if said user response does not match said predefined response for each light of said
24 plurality of lights, and wherein said comparator circuit outputs a second signal if a
25 predefined plurality of user responses match a predefined response sequence; and

26 an electronic locking mechanism coupled to said optical controller, said
27 electronic locking mechanism having a locked position and an unlocked position, wherein
28 said electronic lock is maintained in said locked position when said comparator circuit
29 outputs said first signal, and wherein said electronic lock is maintained in said unlocked
30 position when said comparator circuit outputs said second signal.

1 25. An optical controller comprising:

2 a plurality of lights, wherein said plurality of lights are individually
3 distinguishable;

4 a processor coupled to said plurality of lights, wherein said processor
5 sequentially pulses each light of said plurality of lights in a predetermined light sequence;

6 a user response sensor coupled to said processor, said user response sensor
7 having a first state of operation and a second state of operation;

8 a memory coupled to said processor, wherein for each light of said
9 plurality of lights pulsed by said processor, said processor registers said state of operation
10 of said user response sensor in said memory as a user response;

11 a comparator circuit coupled to said processor, wherein for each light of
12 said plurality of lights pulsed by said processor, said comparator circuit compares said
13 user response to a predefined response, wherein said comparator circuit outputs a first

14 signal if said user response does not match said predefined response for each light of said
 15 plurality of lights, and wherein said comparator circuit outputs a second signal if a
 16 predefined plurality of user responses match a predefined response sequence; and
 17 an electronic locking mechanism having a locked position and an unlocked
 18 position, wherein said electronic lock is maintained in said locked position when said
 19 comparator circuit outputs said first signal, and wherein said electronic lock is maintained
 20 in said unlocked position when said comparator circuit outputs said second signal.

1 26. The optical controller of claim 25, wherein said plurality of lights
 2 are distinguishable on the basis of location within a predetermined light pattern.

1 27. The optical controller of claim 25, wherein said plurality of lights
 2 are distinguishable on the basis of a plurality of labels corresponding to said plurality of
 3 lights.

1 28. A method of generating control signals, the method comprising the
 2 steps of:
 3 sequentially pulsing each light of a plurality of lights following a
 4 predetermined sequence, wherein each light of said plurality of lights emits a different
 5 color;
 6 registering a user response for each light of said plurality of lights;
 7 comparing said user response to a predefined response;
 8 outputting a first control signal if said user response does not match said
 9 predefined response; and
 10 outputting a second control signal if a plurality of user responses for a
 11 predefined portion of said plurality of lights matches a predefined response sequence.

1 29. The method of claim 28, wherein said predetermined sequence is a
 2 random sequence.

1 30. The method of claim 28, wherein said predetermined sequence is a
 2 non-random sequence.

1 31. The method of claim 28, wherein said predefined response
 2 sequence is an access code.

1 32. A method of generating control signals, the method comprising the
2 steps of:

3 sequentially pulsing each light of a plurality of lights following a
4 predetermined sequence, wherein each light of said plurality of lights emits a different
5 color;

6 monitoring at least one eye of a user;

7 registering a first user response for each light of said plurality of lights
8 wherein said monitored eye does not blink;

9 registering a second user response for each light of said plurality of lights
10 wherein said monitored eye blinks;

11 comparing said first and second user responses to a predefined response
12 sequence;

13 outputting a first control signal if said first and second user responses do
14 not match said predefined response sequence; and

15 outputting a second control signal if said first and second user responses
16 do match said predefined response sequence.

1 33. The method of claim 32, wherein said predetermined sequence is a
2 random sequence.

1 34. The method of claim 32, wherein said predetermined sequence is a
2 non-random sequence.

1 35. The method of claim 32, wherein said predefined response
2 sequence is an access code.